

Summary

Purpose of the Proposed Action

The Federal Highway Administration (FHWA), the Washington State Department of Transportation (WSDOT), the Port of Seattle, King County, and the Cities of Des Moines and SeaTac propose to improve regional highway connections with an extension of State Route (SR) 509 to serve future transportation needs in southwest King County and to enhance southern access to and from Seattle-Tacoma International Airport (Sea-Tac Airport). (Figure S-1 shows the location of the project area within the larger metropolitan area and Figure S-2 shows the detail of the project area.)

Description of the Proposed Action

The proposed action would extend the SR 509 freeway from its current terminus at South 188th Street /12th Place South southeasterly to a new interchange with Interstate 5 (I-5) in the vicinity of South 210th Street. To accommodate this interchange, improvements to I-5 between approximately South 210th Street and South 310th Street are also proposed. The SR 509: Corridor Completion/I-5/South Access Road Project would improve regional highway connections, enhance southern access to and from Sea-Tac Airport, and improve related local traffic circulation patterns.

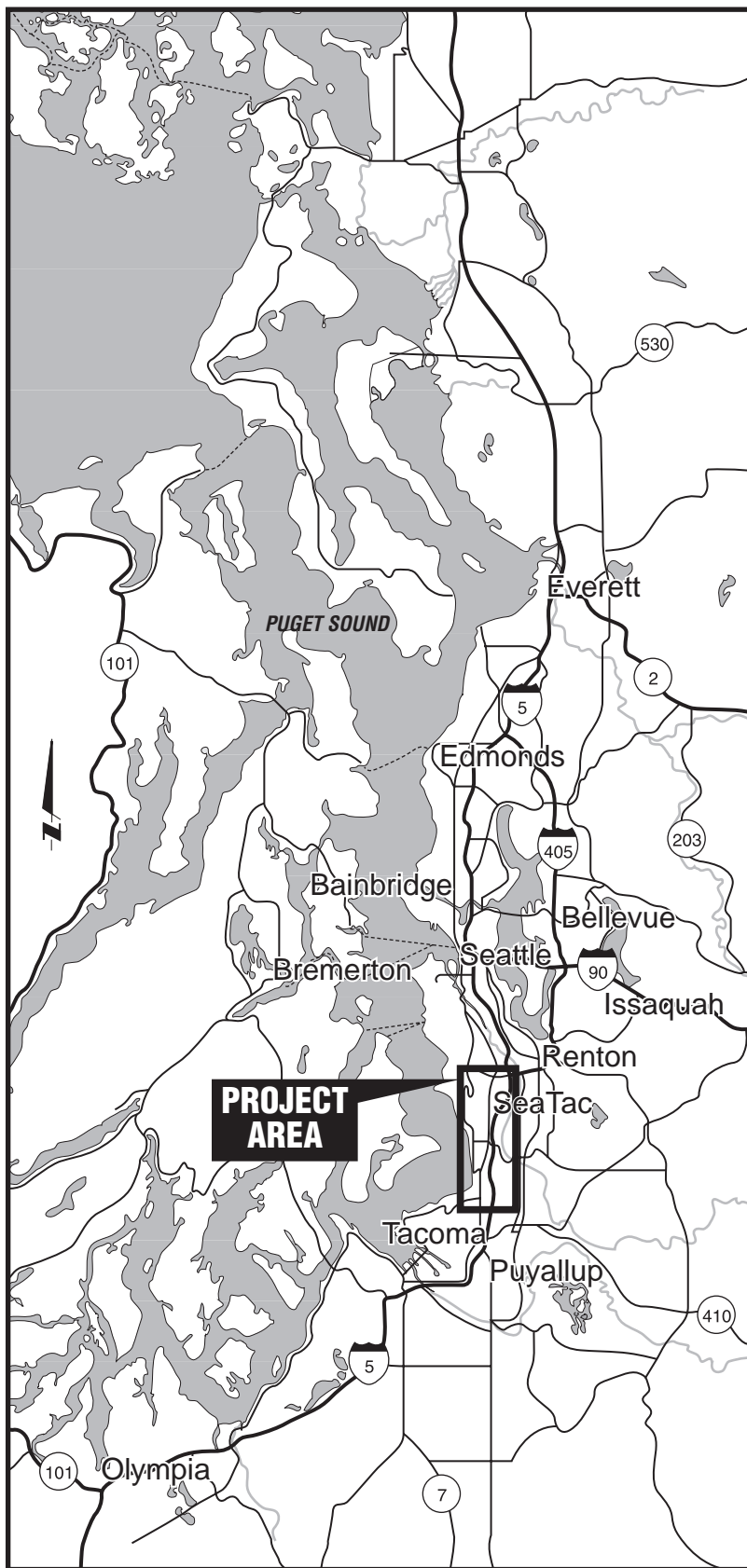
Three build alternatives (Alternatives B, C2, and C3) and a No Action Alternative (Alternative A) are considered in this Final Environmental Impact Statement (FEIS).

Alternative A (No Action)

The No Action Alternative (Figure S-3) represents the baseline transportation system conditions assumed to exist in the future if the proposed project is not constructed. Under the No Action Alternative, the SR 509 freeway extension, the South Access Road to Sea-Tac Airport, and the improvements to I-5 would not be built. This alternative, as well as the other alternatives, is defined in Chapter 2.

Features Common to All Build Alternatives

Each alternative for the SR 509 freeway extension would originate at approximately South 188th Street/12th Place South. The northern terminus of the South Access Road would be at the south end of the airport terminal drives. The southern terminus of the South Access Road would connect with

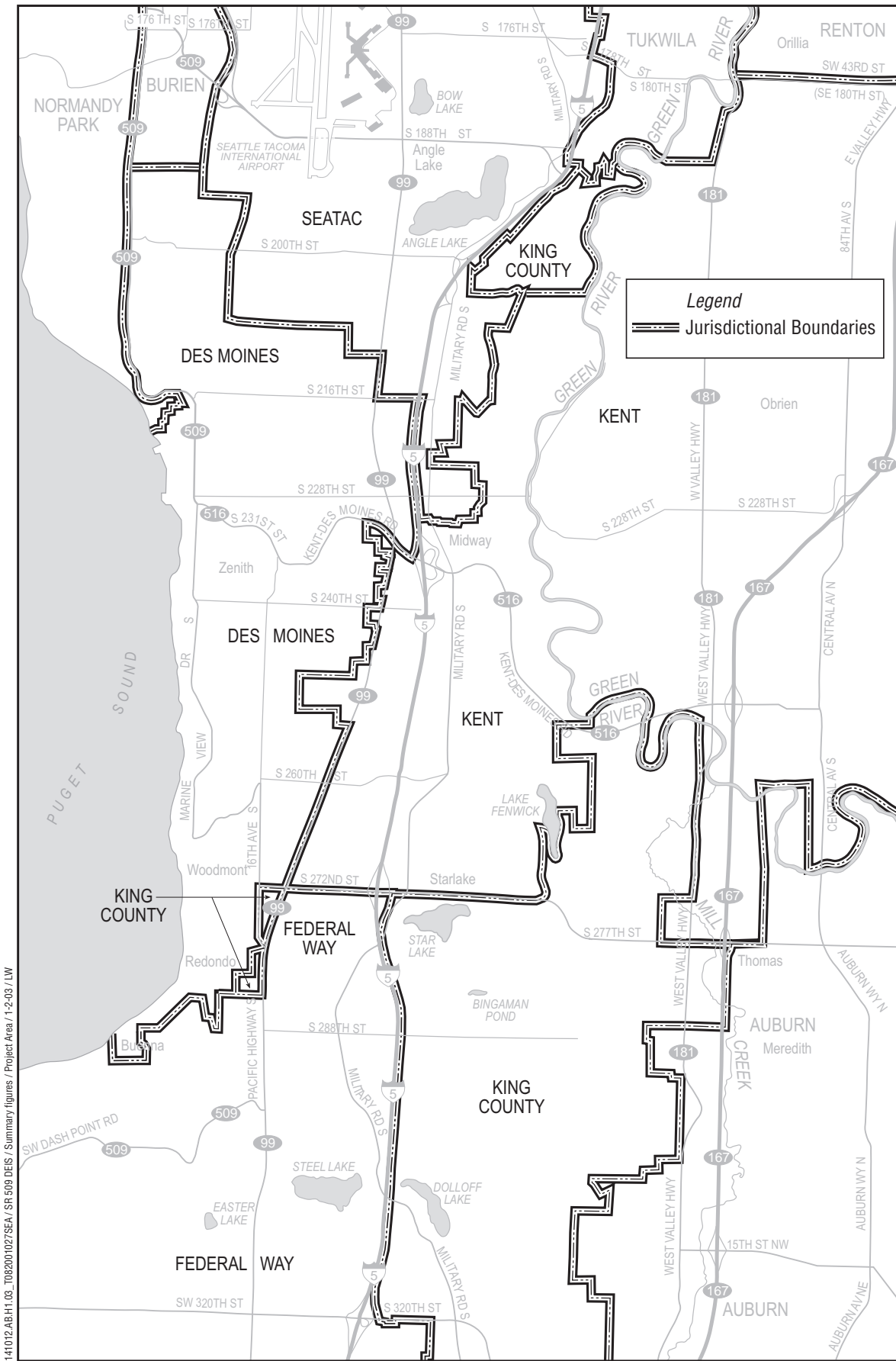


NOT TO SCALE

FIGURE S-1

Project Area Location Map

SR 509: Corridor Completion/
I-5/South Access Road
Environmental Impact Statement

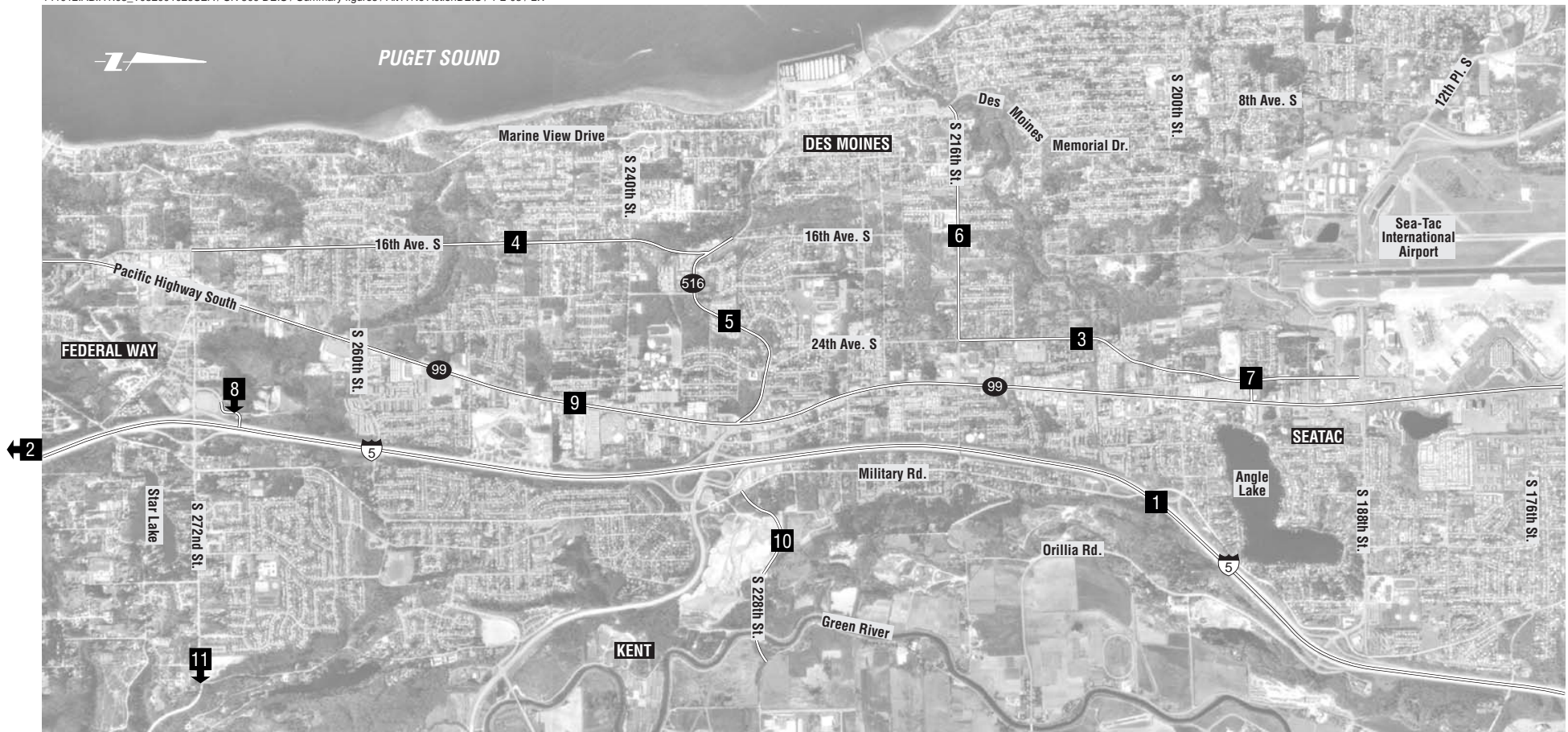


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FIGURE S-2

Project Area

SR 509: Corridor Completion/I-5/South Access Road
 Environmental Impact Statement



Legend

Baseline Projects by others

0 1/4 1/2 3/4 1 MILES

Baseline Projects Assumed for No Action Alternative.

- | | |
|---|--|
| 1 I-5 HOV Lanes | 7 S. 195th Street |
| 2 I-5 @ S. 317th Street Direct Access Ramp | 8 I-5 @ S. 272nd Street In-Line Station |
| 3 28th/24th Avenue S. Arterial
(Phase 1 completed – S. 188th to S. 204th Streets) | 9 Pacific Highway S./International Boulevard (SR 99)
(Phases 1 and 2 completed – S. 170th to S. 200th Streets) |
| 4 16th Avenue S. | 10 S. 228th Street |
| 5 Kent-Des Moines (SR 516) Road | 11 S. 272nd/S. 277th Street Corridor |
| 6 S. 216th Street | |

FIGURE S-3

Alternative A (No Action)

SR 509: Corridor Completion/I-5/South Access Road
Environmental Impact Statement

the SR 509 freeway extension; the location and design of this connection would vary with each alternative. Improvements to I-5 would be the same for all build alternatives.

SR 509 Mainline/South Access Road

The configuration of the SR 509 freeway extension would be six lanes: two general purpose travel lanes and an inside high-occupancy vehicle (HOV) lane in each direction. The South Access Road would consist of two general purpose lanes in each direction, for a total of four lanes. In general, right-of-way widths would be at least 200 feet for the SR 509 freeway extension and at least 120 feet for the South Access Road. The SR 509 freeway extension would be designed to level of service (LOS) D and a speed of 70 miles per hour (mph). The South Access Road would be designed to LOS D and a speed of 35 to 45 mph.

South Airport Link

The South Airport Link, the northern 1,000 feet of the South Access Road that would connect to the existing Airport Terminal Drive system, has three design options. At the south end, each design option crosses beneath South 188th Street and the southeast corner of Sea-Tac Airport via a tunnel. At the north end, the design options would maintain both southbound and northbound connections from the upper and lower terminal drives. Under Design Option H0, Air Cargo Road and the South Access Road would be "stacked" via an extended "S"-curve tunnel structure (Figure S-4). Under Design Option H2-A, Air Cargo Road and the South Access Road would generally parallel each other and would be separated by medians (Figure S-4). Design Option H2-B would be essentially the same as Design Option H2-A, except that it would provide local access routes for only northbound traffic at the intersection of South 188th Street and 28th Avenue South (Figure S-4). Design Option H2-B is the option included in the preferred alternative.

Improvements to I-5

The southbound improvements to I-5 would include two new collector-distributor (C/D) lanes between the SR 509 convergence and SR 516, two new auxiliary lanes from SR 516 to South 272nd Street, and a new auxiliary lane from South 272nd Street to approximately South 310th Street, where the proposed project would match with an auxiliary lane to be constructed for the Sound Transit I-5 @ South 317th Street Direct Access Ramp project. On northbound I-5, a new auxiliary lane would extend between South 272nd Street and the SR 516 interchanges, and two new C/D lanes would start at the SR 516 interchange to serve I-5 traffic exiting to SR 509 and SR 516 traffic entering I-5. In addition, a South 228th Street extension and underpass would be constructed, providing a direct connection to northbound I-5 from South

FIGURE S-4
South Airport Link Design Options
SR 509: Corridor Completion/I-5/South Access Road
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228th Street and from southbound I-5 to South 228th Street. Figure S-5 presents a schematic of the I-5 improvements. These improvements would cover approximately 6.7 miles.

Alternative B

Under Alternative B, the SR 509 mainline would extend southward from its existing terminus at South 188th Street/12th Place South and intersect with I-5 in the vicinity of South 211th Street (Figure S-6). The freeway extension and the South Access Road would generally parallel each other in a north-south orientation on the west and east sides of Des Moines Creek Park, starting in the vicinity of South 208th Street and 24th Avenue South. The alignment would cross over Des Moines Creek and pass through Des Moines Creek Park at its narrowest point. The length of the SR 509 freeway extension for Alternative B would be approximately 3.8 miles.

Alternative C2 (Preferred Alternative)

Alternative C2, the preferred alternative, would begin at the existing SR 509 terminus at South 188th Street/12th Place South and intersect with I-5 in the vicinity of South 212th Street (Figure S-7). Alternative C2 would cross to the east on the north side of Des Moines Creek Park. The alignment would be elevated as it crosses the northeast corner of Des Moines Creek Park. The South Access Road interchange with SR 509 would be in the vicinity of South 208th Street and 24th Avenue South. The length of the SR 509 freeway extension for Alternative C2 would be approximately 3.2 miles.

Alternative C3

Alternative C3 would begin at the existing SR 509 terminus at South 188th Street/12th Place South and intersect with I-5 in the vicinity of South 212th Street (Figure S-8). Like Alternative C2, Alternative C3 would cross to the east on the north side of Des Moines Creek Park; however, it would encroach further into the park than Alternative C2. Alternative C3 would also be elevated as it crosses the northeast corner of Des Moines Creek Park. The South Access Road interchange would occur in the vicinity of South 204th Street and 24th Avenue South. The length of the SR 509 extension for Alternative C3 would be approximately 3.5 miles.

Related Actions

Related actions proposed by other government agencies include the following:

- Development of the South Aviation Support Area (SASA) for Sea-Tac Airport

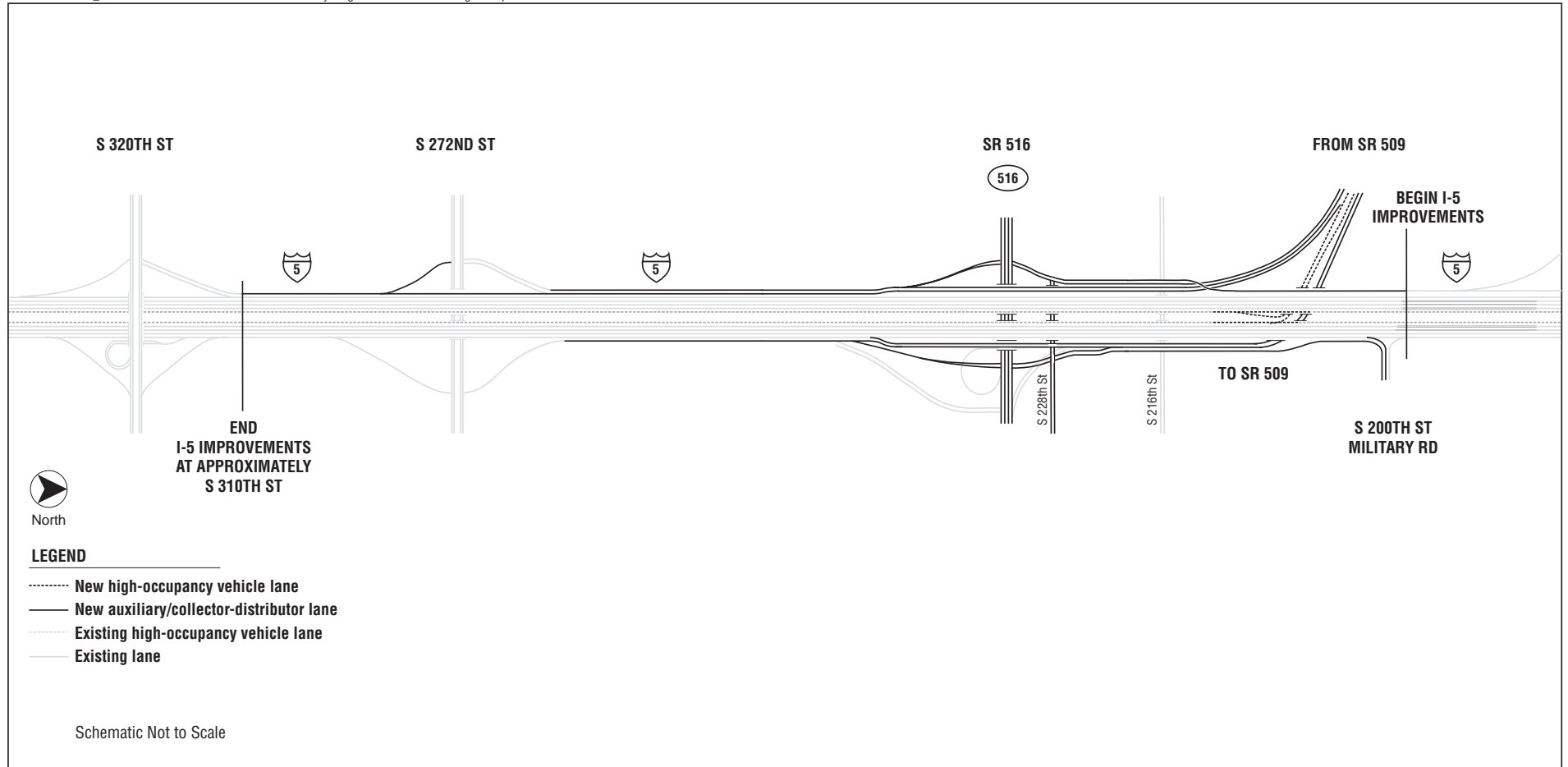
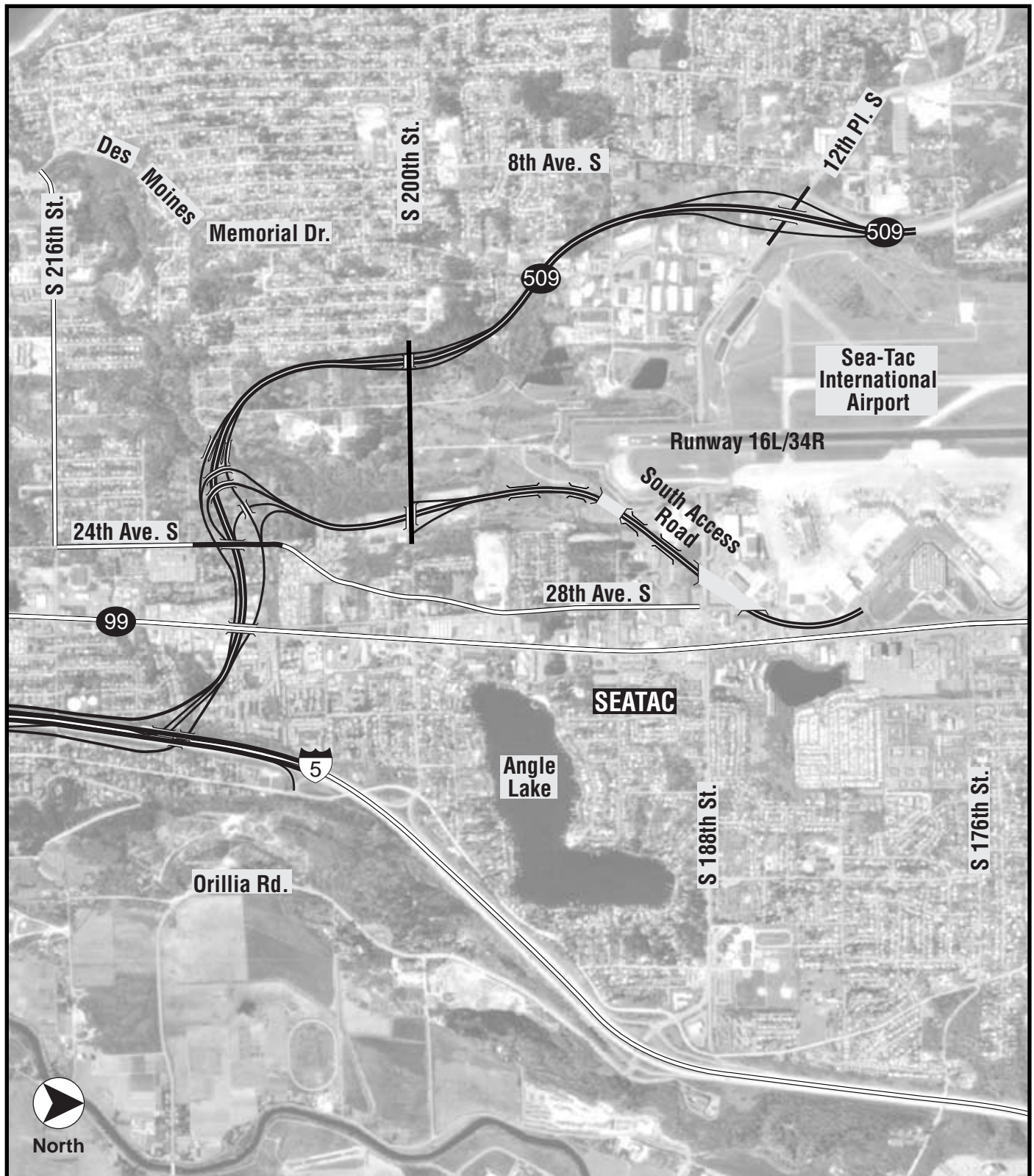


FIGURE S-5

Schematic Drawing of I-5 Improvements

SR 509: Corridor Completion/I-5/South Access Road
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0 1/4 1/2 3/4 1 MILES

Legend


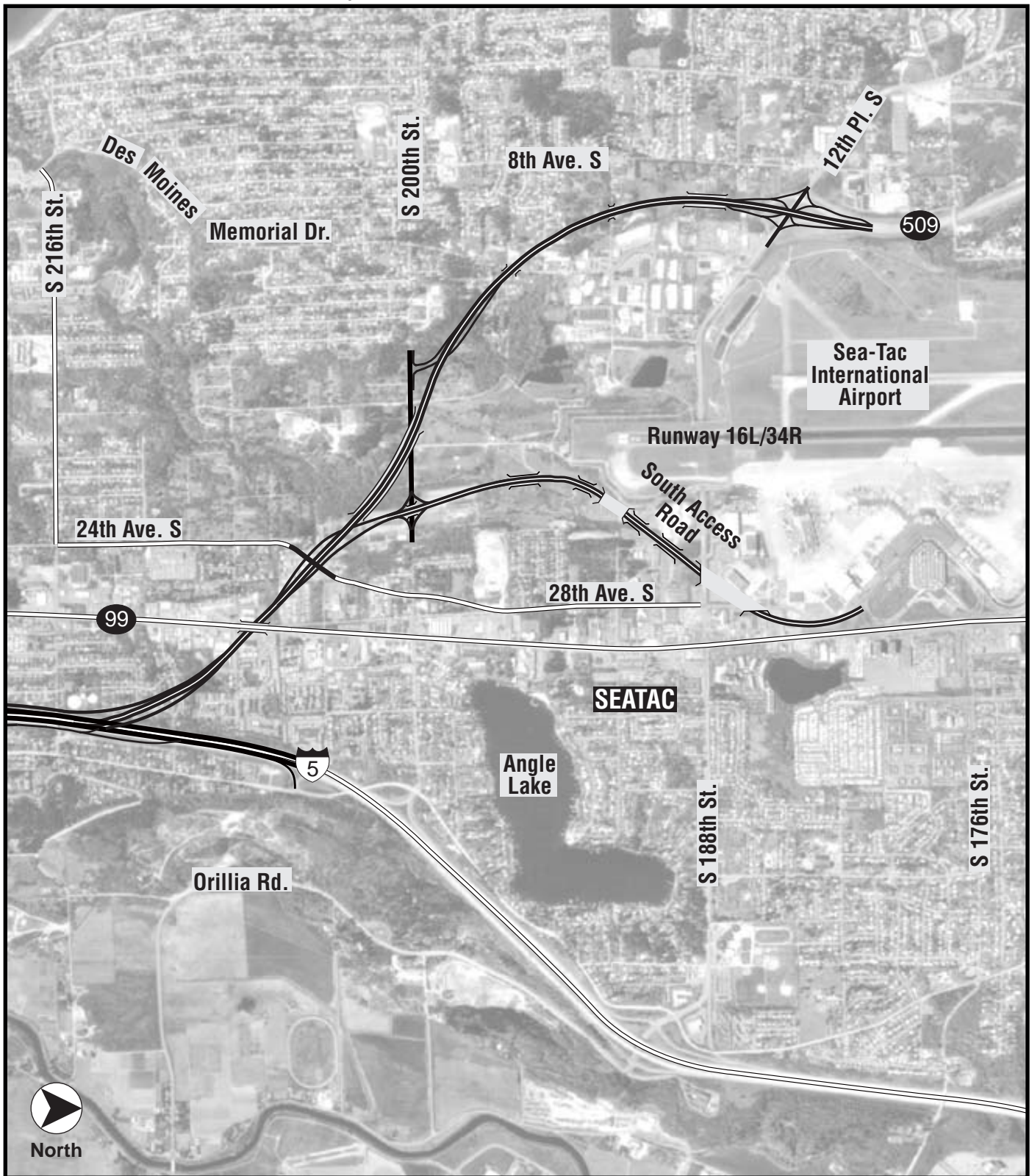
-  SR 509/South Access Road Improvements
-  Bridge

FIGURE S-6

Alternative B

SR 509: Corridor Completion/I-5/South Access Road
Environmental Impact Statement



Legend

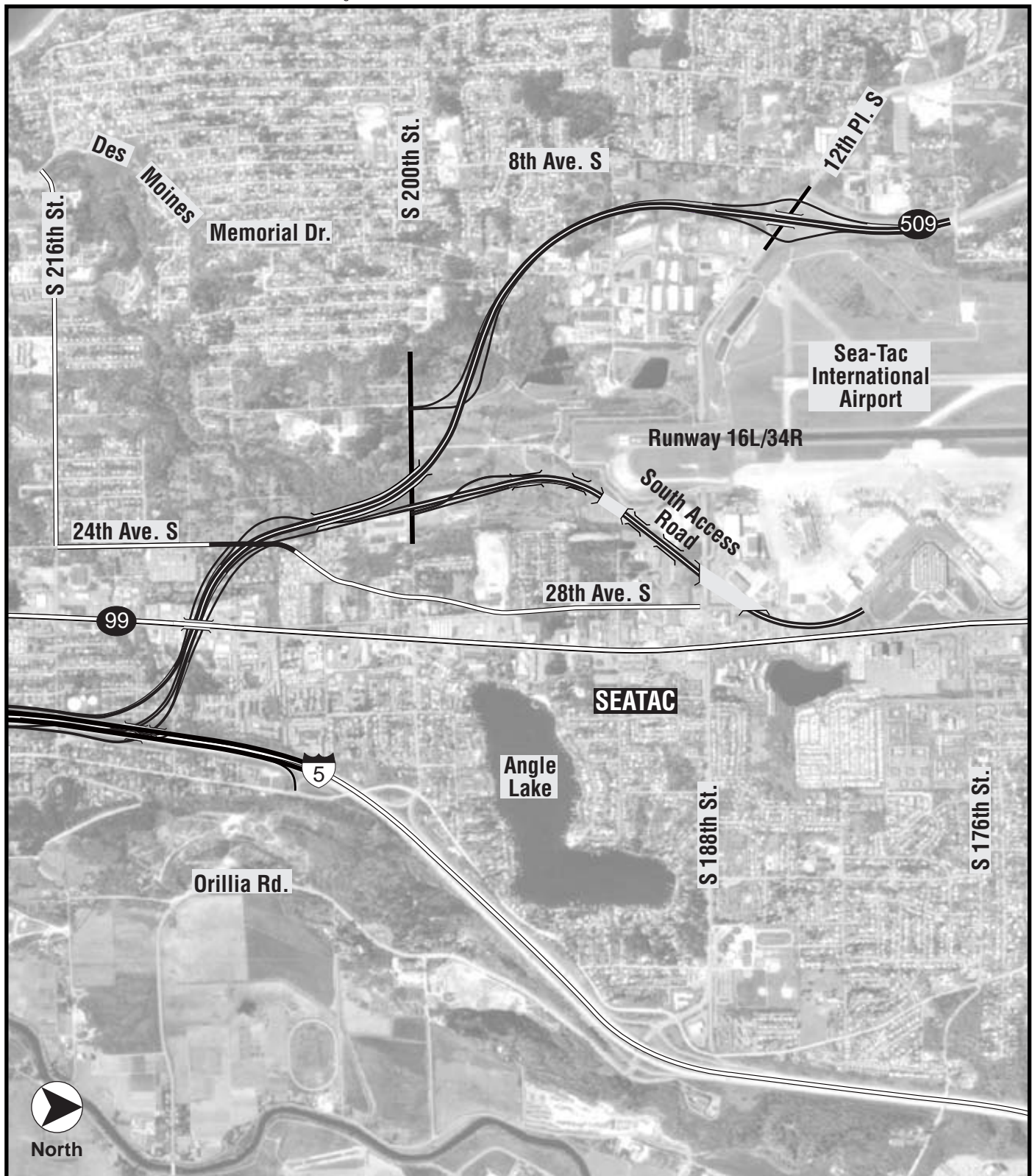
 SR 509/South Access Road Improvements

 Bridge

FIGURE S-7

Alternative C2 (Preferred)

SR 509: Corridor Completion/I-5/South Access Road
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0 1/4 1/2 3/4 1 MILES

Legend
 SR 509/South Access Road Improvements
 Bridge

FIGURE S-8

Alternative C3

SR 509: Corridor Completion/I-5/South Access Road
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- Redevelopment within the Port of Seattle Noise Remedy Program area
- Construction of an intermodal Ground Transportation Center at Sea-Tac Airport
- Development of City of SeaTac Central Business District and Aviation Business Center proposals
- Implementation of the Des Moines Creek Basin Plan
- Execution of the Sound Transit Move Program
- Completion of the redesign and construction of SR 99 through Tukwila and SeaTac

In addition, there are a number of currently planned local and regional transportation improvement projects that will be constructed in the project area and/or that would have a potential effect on traffic operations in the project area. These transportation projects, shown on Figure S-3, are programmed to be in place by 2020. The development and transportation projects are expected to affect traffic capacity and operation within the project area. These projects have already been, or will be, subject to separate environmental reviews; analysis of their specific impacts is not included in this report.

Events Since Publication of the Revised Draft Environmental Impact Statement

The Revised DEIS was issued on January 30, 2002. A public open house on the Revised DEIS was held on February 12, 2002, and a joint public hearing and open house on the Revised DEIS was held on February 27, 2002. Both of these meetings were held at Highline Community College. Court reporters were present at each meeting to record comments on the Revised DEIS. Comments were received from approximately 59 individuals, groups, or agencies. All comments received on the Revised DEIS, along with written responses to these comments, are provided in Chapter 5 of this FEIS.

Preferred Alternative

Alternative C2 has been identified as the preferred alternative by the Steering Committee, the Executive Committee, and the NEPA/SEPA Merger Agreement Signatory Agency Committee (SAC), and based on the environmental analysis presented in the January 2002 Revised DEIS and public input received during review of Revised DEIS.

Alternative C2 would result in less conversion of other land uses to roadway right-of-way than Alternative B, and fewer impacts on the natural and built environment, including residential and commercial displacements, number of sensitive noise receivers, right-of-way acquisition in Des Moines Creek Park, wetlands, wildlife habitat, and amount of new impervious surfaces.

Alternatives C2 and C3 would have similar impacts; however, Alternative C3 would cross through the Alaska Airlines Gold Coast Center, which would have substantial negative effect on the economic base of the City of SeaTac. Alternative C2 would cause fewer single-family residential unit displacements than Alternatives B and C3. Although Alternative C2 would have more multifamily unit displacements than the other alternatives, it would be possible to relocate the residents within the area.

Based on the combination of lesser environmental impacts compared to the other build alternatives and the mitigation that has been proposed, Alternative C2 has been recommended as the preferred alternative.

Selection of the Preferred South Airport Link Design Option

Three South Link Design Options (Design Options H0, H2-A, and H2-B) were evaluated in the Revised DEIS. Since publication of the Revised DEIS, a modified Design Option H2-B has been selected by the lead and cooperating agencies for inclusion in the preferred alternative. This design option was selected because it provides the best connection between Sea-Tac Airport and the City of SeaTac downtown business district by providing connections at both South 200th Street and South 188th Street.

Design Option H2-B has been modified to eliminate the southbound off-ramp from the proposed South Airport Link to South 188th Street. This off-ramp was eliminated because its construction would create operational difficulties. The northbound on-ramp from South 188th Street to the proposed South Airport Link is still included in Design Option H2-B.

The Port of Seattle and the City of SeaTac consider egress in the vicinity of South 188th Street to be very important to the community. The Port and the City will continue to investigate options for providing acceptable egress from the South Airport Link to the local arterial network in the vicinity of South 188th Street. When a mutually acceptable egress solution has been developed, it will be subject to its own SEPA evaluation.

Additional Design of the Preferred Alternative

Since publication of the Revised DEIS, additional design and analyses have been conducted in support of the preferred alternative (Alternative C2). This extra level of detail on the preferred alternative is justified under FHWA Technical Advisory T6640.8A (October 30, 1987), Section V, Environmental Impact Statement, Part E, Alternatives, which states:

Development of more detailed design for some aspects (e.g., Section 4(f), COE or CG permits, noise, wetlands, etc.) of one or more alternatives may be necessary during preparation of the draft and final EIS to evaluate impacts or mitigation measures or to address issues raised by other agencies or the public.

The following sections describe the additional design, environmental analyses, and other studies that were performed.

Roadway Design

Since publication of the Revised DEIS, design has progressed to further develop and refine this alternative as it was presented in the Revised DEIS. The design effort resulted in two modifications—a change in the configuration of the interchange at South 188th Street/12th Place South and the separation of northbound and southbound lanes along a portion of the SR 509 freeway extension.

The existing SR 509 freeway terminates at South 188th Street/12th Place South in a trumpet (T-shaped) interchange. The proposed project would replace this interchange with a single-point urban interchange. This design is preferred over the diamond interchange described in the Revised DEIS because it provides better traffic flow, reduces queuing, and allows for better arterial signal spacing on 12th Place South.

Between the South 188th Street/12th Place South interchange and the western end of the bridge across Des Moines Creek Park, most of the SR 509 freeway extension would be divided by a 30- to 40-foot median. Separation of the northbound and southbound lanes would provide a more context-sensitive design by separating an imposing 120-foot-wide bridge across the park into two smaller bridge decks, which would better integrate the structure with the terrain. This separation has the added benefit of reducing shading impacts on the wetland beneath the bridge by allowing light and precipitation to reach the underlying vegetation.

Stormwater Design

In May 2002, WSDOT conducted a Stormwater Value Engineering (VE) study to develop a stormwater treatment strategy for the preferred alternative. The emphasis was to develop a strategy that included input from jurisdictional agencies to address comments on the Revised DEIS. The VE study team consisted of WSDOT and consultant team staff, as well as representatives from the Washington State Department of Ecology, National Marine Fisheries Service (NMFS), King County, City of SeaTac, and Port of Seattle. The *SR 509/I-5 Stormwater VE* (Olympic Associates Company, October 2002) identified and evaluated several recommendations for stormwater treatment for the proposed project.

Feasibility studies related to the VE study recommendations have been performed to determine which recommendations could be implemented and which would require additional design effort or study. Detailed stormwater design is being developed that incorporates some of the VE study recommendations. The design includes infiltration of stormwater runoff wherever feasible, given subsurface conditions. Where not feasible, stormwater design includes detention with enhanced treatment. Measures to reduce the total amount of impervious surface are being incorporated into the project stormwater design.

If the SR 509 project is approved, WSDOT would increase its partnership with the Des Moines Creek Basin Plan by contributing funds to finance Capital Improvement Projects (CIP) described in the plan. WSDOT has committed to partially finance the replacement of the fish-impassable culvert at Marine View Drive with a bridge, as described in the Des Moines Creek Basin Plan. Additionally, stormwater design for the SR 509 project is being developed under the assumption that two other projects identified in the plan, a high-flow bypass around Des Moines Creek and increased storage volume of the Northwest Ponds regional detention facility, will be constructed. These two projects would have the net effect of reducing flows in Des Moines Creek relative to current conditions.

The outcomes of the revised stormwater design include reductions in overall stormwater treatment costs and associated property impacts, in conjunction with a design that meets the intent of the current agency stormwater treatment guidelines. Additionally, the project would apply a basinwide approach to flow control in Des Moines Creek Basin.

Additional Environmental Analyses of the Preferred Alternative

Additional environmental analyses that were conducted in support of the preferred alternative are described below.

Air Quality Analysis

After publication of the Revised DEIS, the preferred alternative was further analyzed to determine localized (hot-spot) and regional conformity with the Puget Sound region's air quality maintenance plans pursuant to the requirements of 40 CFR Part 93 and Washington Administrative Code, Chapter 173-420. FHWA policy is that project conformity must be demonstrated prior to issuance of the record of decision for a project on which they are a lead agency.

In May 2001, the Puget Sound Regional Council (PSRC) adopted a new regional transportation plan, *Destination 2030*. The SR 509: Corridor Completion/I-5/South Access Road Project is identified as a Candidate project in this plan. In their comment letter on the Revised DEIS, PSRC

recommended that WSDOT request PSRC to conduct a regional air quality conformity test of the final preferred alternative.

PSRC conducted the regional conformity analysis using the latest regional planning assumptions, including emission factors and an analysis year consistent with those used in the PSRC Metropolitan Transportation Plan (MTP), which was adopted in 2001 (*Destination 2030*), and its subsequent revisions. On June 27, 2002, the PSRC Executive Board approved refinement of the MTP to reflect the design of the preferred alternative. PSRC's modeling demonstrates that air quality in the Puget Sound region, including implementation of the preferred alternative, would conform at the regional level to the regional air quality maintenance plans. The preferred alternative would not cause any new exceedances or contribute to any existing regional exceedances of the national ambient air quality standards.

The proposed project is located in a carbon monoxide (CO) maintenance area. Project-level conformity is required for projects in CO maintenance areas. In the Revised DEIS, CO concentrations for the year 2020 were evaluated at three intersection locations for each of the build alternatives. To demonstrate compliance with *Destination 2030*, CO concentrations for the year 2030 were evaluated for the preferred alternative at the three intersection locations analyzed in the Revised DEIS, plus seven additional locations. Based on the modeling results, the preferred alternative for the proposed SR 509: Corridor Completion/I-5/South Access Road Project would not cause any new violations or contribute to any existing localized violations of the national ambient air quality standards for CO.

A detailed description of the updated regional and project-level air conformity analyses are provided in Appendix H of this FEIS.

Noise Analysis

The SR 509 project alternatives are spread over a relatively large area. Because terrain and roadway geometry information was not available for all alternatives evaluated in the Revised DEIS, a simplified version of the FHWA STAMINA 2.0 noise model developed by the Texas Department of Transportation was used to perform the noise analysis. This approach did not account for the effects of terrain, barriers, and buildings on noise propagation. Such factors could influence the location of proposed noise mitigation walls. FHWA concurred with this approach, with the proviso that a more detailed noise analysis with terrain information be conducted for the preferred alternative for inclusion in the FEIS.

In July 2002, a detailed noise analysis using the FHWA TNM was conducted for the preferred alternative. This analysis includes the I-5 improvements, which are common to all of the build alternatives. Additionally, 24-hour airport noise monitoring data were obtained to address comments on the

Revised DEIS pertaining to noise. The detailed noise analysis and proposed noise mitigation are provided in Appendix I of this FEIS.

Other Studies of the Preferred Alternative

Cost Estimate Validation Process

In March, May, and June 2002, Cost Estimating Validation Process (CEVP) workshops were held for the proposed project. The goal of these workshops was to review and validate the current cost estimates for large WSDOT projects. Each project is examined by a team of top engineers from private firms, contractor and risk experts from around the country, and WSDOT engineers. Many of the participants have had extensive first-hand experience in large project programming and delivery.

The CEVP workshop uses systematic project review and risk assessment methods, including statistics and probability theory, to evaluate the quality of the information at hand and to identify and describe cost and schedule risks. Importantly, the process examines, from the very beginning, how risks can be lowered and cost vulnerabilities managed or reduced.

The CEVP is intended to make recommendations to WSDOT that would allow a better understanding of the current project estimate and also identify potential cost and schedule ranges that depend on potential risk events, the level of project definition, and the time frame.

The final conclusion of the July 2002 CEVP was that the project would cost \$903 to \$985 million in year of expenditure dollars. The intention of the CEVP was for the project to develop a plan or strategy to reduce or eliminate the risks identified during the CEVP, including risks associated with cost increases and schedule delays. The greatest risks associated with project costs were, in descending order, changing market conditions, changes in seismic criteria, issues with the I-5/South 272nd Street Interchange, SR 509/Port of Seattle right-of-way costs, stormwater collection and treatment, and issues associated with the Midway Landfill Superfund site. The highest risks associated with project delays were issues with the Midway Landfill Superfund site, work restrictions, labor disruptions or major equipment breakdowns, utilities, permitting, combinations of lower risk items, and issues with the SR 509/Port of Seattle right-of-way. WSDOT is now in the process of developing and executing a plan to proactively manage these risks, including minimizing or reducing risks whenever possible.

Construction Staging VE Study

In early May 2002, a weeklong VE Study was held to examine the duration of the construction effort for the I-5 corridor facilities to determine ways to potentially reduce the construction duration. The outcome of this effort was a construction schedule reduction for the I-5 improvements from

approximately 6 years to 4 years or less, which, in turn, would reduce the construction duration for the entire project to 7 years. This would result in cost savings, reductions in temporary erosion and sediment control, and less public inconvenience.

Concurrence Point 3

In June 1995, the Interagency Working Agreement to Integrate Special Aquatic Resources (Section 404 of the Clean Water Act) Permit Requirements with NEPA and SEPA in the State of Washington was signed. This agreement integrates the Section 404 permit processes and other related permitting and certification procedures into the NEPA and SEPA processes early in the project programming and project development stages. The signatory agencies to this agreement are referred to as the SAC.

As part of the interagency agreement, concurrence is sought from the SAC at three points in the EIS process. Concurrence had previously been obtained from the SAC for Concurrence Point 1, project purpose and need and criteria for alternative selection, and Concurrence Point 2, project alternatives to be evaluated in the EIS and preliminary preferred alternative.

On September 12, 2002, WSDOT sent a letter to the SAC requesting concurrence on Concurrence Point 3. Concurrence Point 3 addresses three items: (1) the project Conceptual Wetland Mitigation Plan, (2) federal agency concurrence on the Preferred Alternative/Apparent Section 404 Least Environmentally Damaging Practicable Alternative, and (3) state agency concurrence on the NEPA/SEPA Preferred Alternative. Concurrence by each of the signatory agencies was obtained by November 15, 2002.

SAC concurrence on the proposed project is discussed in more detail in Appendix A.

Summary of Major Environmental Impacts

Table S-1 summarizes the major impacts each alternative is likely to have on the elements of the environment, along with any measures that are recommended or proposed to mitigate those impacts.

Permits, Licenses, and Other Required Actions or Approvals

- Federal Highway Administration
 - Interstate Access Approval

- U.S. Army Corps of Engineers
 - Section 404 of the Clean Water Act Permit
- Washington State Department of Ecology (Ecology)
 - Water Quality Certification, Section 401 of the Clean Water Act
 - National Pollutant Discharge Elimination System (NPDES) Stormwater Permit
 - NPDES Stormwater Site Plan—Individual
 - Coastal Zone Management Permit
- Washington Department of Natural Resources
 - Forest Practices Permit
- Washington State Department of Fish and Wildlife (WDFW)
 - Hydraulic Project Approval
- Cities of SeaTac, Des Moines, Federal Way, and Kent, and King County
 - Noise Variance
 - Clearing Permit
 - Critical Area Determination
 - SeaTac Essential Public Facilities Permit
- King County
 - Landfill Disturbance Permit (to be obtained by others)
- Federal Aviation Administration
 - Airport Highway Clearance

Estimated Cost and Construction Schedule

The estimated cost of constructing the SR 509: Corridor Completion/I-5/South Access Road Project for each alternative is as follows:

- Alternative B—\$715 to \$735 million
- Alternative C2—\$690 to \$710 million
- Alternative C3—\$695 to \$715 million

These cost estimates are in 1999 dollars and are based on preliminary design information. These costs do not include the South Airport Link, the last 1,000 feet connecting the South Access Road to airport roadways.

In spring 2002, Cost Estimating Validation Process (CEVP) workshops were held for the proposed project based on the design for Alternative C2, the preferred alternative. The goal of these workshops was to review and validate the current cost estimates, and develop a plan or strategy to reduce or eliminate the risks associated with cost increases and schedule delays. The

final conclusion of the CEVP was that the project would cost \$903 to \$985 million in year of expenditure dollars and include the cost of identified risks. If the CEVP were applied to Alternatives B and C3, a similar increase in project cost in year of expenditure would be expected, relative to the estimates in 1999 dollars given above.

If one of the build alternatives is selected, construction could begin in 2006 and be completed by 2013. This anticipated start date is based on the availability of funds, which are not currently appropriated for the project. If funding is not available, the start of construction will be delayed.

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
3.1 Air Quality	<p>Operation (Long-Term) Impacts</p> <p>Localized pollutant concentrations would not exceed the NAAQS.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None required.</p>	<p>Operation (Long-Term) Impacts</p> <p>Same as the No Action Alternative.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>Construction activities would result in temporary emissions of pollutants.</p> <p>Mitigation Measures</p> <p>Use of best management practices during construction would control particulate emissions.</p>	<p>Operation (Long-Term) Impacts</p> <p>Same as the No Action Alternative.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>	<p>Operation (Long-Term) Impacts</p> <p>Same as the No Action Alternative.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>
3.2 Noise	<p>Operation (Long-Term) Impacts</p> <p>Based on the detailed method of noise analysis, peak-hour traffic noise levels would increase by 1 dBA at noise sensitive locations along I-5. Noise levels would exceed noise abatement criteria at a few residential locations along I-5.</p>	<p>Operation (Long-Term) Impacts</p> <p>Approximately 2,458 impacted receptors (within the projected 66 dBA noise contour based on 2020 PM peak hour traffic volumes) would include mostly residences, plus 3 schools, 3 parks, and 5 churches (this number will decrease as noise barriers planned by WSDOT are completed along I-5 as mitigation for previous projects). Noise</p>	<p>Operation (Long-Term) Impacts</p> <p>Approximately 2,578 impacted receptors (within the projected 66 dBA noise contour based on 2020 PM peak hour traffic volumes) would include mostly residences, plus 3 schools, 3 parks, and 6 churches (this number will decrease as noise barriers planned by WSDOT are completed along I-5 as mitigation for previous projects). Noise</p>	<p>Operation (Long-Term) Impacts</p> <p>Approximately 2,390 impacted receptors (within the projected 66 dBA noise contour based on 2020 PM peak hour traffic volumes) would include mostly residences, plus 3 schools, 3 parks, and 6 churches (this number will decrease as noise barriers planned by WSDOT are completed along I-5 as mitigation for previous projects).</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
	<p>Mitigation Measures None proposed.</p> <p>Construction (Short-Term) Impacts No impacts.</p> <p>Mitigation Measures None proposed.</p>	<p>levels along I-5 would increase slightly over 1 dBA relative to the No Action Alternative.</p> <p>Mitigation Measures Noise barriers would be provided at appropriate areas where residents would likely be impacted by traffic noise and where construction of the barriers is justified. Other possible mitigation measures could include building insulation, retaining existing trees and vegetation, thereby reducing noise annoyance psychologically by removing the noise source from view, and constructing land forms.</p> <p>Construction (Short-Term) Impacts Typical construction-related activities—engine-powered equipment, truck movements, impact equipment—would result in short-term and localized noise impacts.</p> <p>Mitigation Measures Contractors would comply with all state and local regulations governing equipment source levels and noise resulting from construction site activities.</p>	<p>levels along I-5 would increase slightly over 1 dBA relative to the No Action Alternative.</p> <p>Mitigation Measures Same as Alternative B.</p> <p>Construction (Short-Term) Impacts Same as Alternative B.</p> <p>Mitigation Measures Same as Alternative B.</p>	<p>Noise levels along I-5 would increase slightly over 1 dBA relative to the No Action Alternative.</p> <p>Mitigation Measures Same as Alternative B.</p> <p>Construction (Short-Term) Impacts Same as Alternative B.</p> <p>Mitigation Measures Same as Alternative B.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		Stationary noise sources would be placed as far from sensitive receivers as possible, idling equipment would be turned off, work that does not need to be done at night would be confined to daytime hours, and trucks would be equipped with properly sized and maintained mufflers.		
3.3 Energy	<p>Operation (Long-Term) Impacts</p> <p>Continued consumption of energy due to traffic congestion, stopping and poor traffic at signals, and slower vehicle speeds.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p>	<p>Operation (Long-Term) Impacts</p> <p>Less energy consumption than the No Action Alternative due to better flow of traffic at higher, more efficient vehicle speeds compared to the No Action Alternative.</p> <p>Slightly more energy consumption than Alternatives C2 and C3.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>Highest energy consumption of the build alternatives.</p> <p>Mitigation Measures</p> <p>None.</p>	<p>Operation (Long-Term) Impacts</p> <p>Less consumption of energy than the No Action Alternative due to best flow of traffic at higher, more efficient vehicle speeds compared to the No Action Alternative.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>Lowest energy consumption of the build alternatives.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>	<p>Operation (Long-Term) Impacts</p> <p>Less consumption of energy than the No Action Alternative due to better flow of traffic at higher, more efficient speeds compared to the No Action Alternative.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>Similar energy consumption to Alternative C2, but less than Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
3.4 Geology and Soils	<p>Operation (Long-Term) Impacts</p> <p>No impacts on earth sensitive areas.</p> <p>Mitigation Measures</p> <p>None proposed.</p> <p>Construction (Short-Term) Impacts</p> <p>No erosion or sedimentation impacts.</p> <p>Mitigation Measures</p> <p>None proposed.</p>	<p>Operation (Long-Term) Impacts</p> <p>Excavation and construction in seismic hazard areas.</p> <p>Approximately 4.2 million cubic yards of cut material and 3.5 million cubic yards of fill.</p> <p>Mitigation Measures</p> <p>Structures would be designed to Seismic Zone 3 standards.</p> <p>Construction (Short-Term) Impacts</p> <p>Highest potential for erosion and sedimentation.</p> <p>Clearing, grading, and excavation could result in erosion and sedimentation to streams and wetlands.</p> <p>Temporary increases in noise, dust, and traffic from hauling cut and fill material.</p> <p>Mitigation Measures</p> <p>Implementation of appropriate erosion control standards during construction.</p>	<p>Operation (Long-Term) Impacts</p> <p>Excavation and construction in seismic hazard areas.</p> <p>Approximately 3.2 million cubic yards of cut material and 1.2 million cubic yards of fill.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Lowest potential for erosion and sedimentation.</p> <p>Other impacts same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>	<p>Operation (Long-Term) Impacts</p> <p>Excavation and construction in seismic hazard areas.</p> <p>Approximately 3.8 million cubic yards of cut material and 3.6 million cubic yards of fill.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Greater potential for erosion and sedimentation than Alternative C2, but lower than Alternative B.</p> <p>Other impacts same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
3.5 Water Quality	<p>Operation (Long-Term) Impacts</p> <p>No additional runoff from new impervious surface would be generated.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p>	<p>Operation (Long-Term) Impacts</p> <p>Approximately 126.5 acres of new impervious surfaces would be created, increasing the potential for higher flows during storms, pollution from highway runoff, and accidental spills. Accidental spills and sand and de-icing chemicals applied during maintenance could affect water quality of all receiving waters. Potential for impacts would be highest at one crossing of Des Moines Creek and four crossings of East Fork of Des Moines Creek. Groundwater recharge would be reduced in areas with fill.</p> <p>Mitigation Measures</p> <p>Detention and water quality measures according to Des Moines Creek Basin Plan, King County Surface Water Manual, and WSDOT Highway Runoff Manual. Stormwater would either be treated and infiltrated, or detained with enhanced treatment. WSDOT would contribute funds to capital improvement projects in the basin plan, which would significantly reduce peak flows in Des Moines Creek and stream bank erosion.</p>	<p>Operation (Long-Term) Impacts</p> <p>Approximately 113 acres of new impervious surfaces would be created, and less stormwater runoff would be generated than for Alternative B. After stormwater treatment, annual pollutant loadings to Des Moines and Miller Creek Basins would be the lowest of the build alternatives. This alternative would have one crossing of Des Moines Creek and four crossings of East Fork of Des Moines Creek. Other impacts would be the same as for Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>	<p>Operation (Long-Term) Impacts</p> <p>Approximately 113.5 acres of new impervious surfaces would be created. Stream crossings would be the same as for Alternative C2. Other impacts would be similar to Alternative C2.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		<p>Construction (Short-Term) Impacts</p> <p>Vegetation removal, interception of sheet flow, and soil compaction could temporarily increase runoff rates and cause erosion and sedimentation in receiving waters. Other pollutants, including fuel and lubricants, paving oils, chemicals, construction debris, and uncured concrete could enter surface waters. These pollutants could infiltrate to groundwater.</p> <p>Mitigation Measures</p> <p>A Stormwater Site Plan (SSP) would be developed to fulfill requirements of NPDES permit. The SSP would include provisions for implementation of BMPs to protect groundwater and public drinking water supply, measures to protect water and sewer lines, and construction monitoring. A Temporary Erosion and Sedimentation Plan (TESC) would also be developed according to King County guidelines. In addition, a Spill Prevention Control and Countermeasures (SPCC) plan would also be adopted as a construction planning element of</p>		

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		the project to reduce accident-related water quality impacts.		
3.6 Wetlands	<p>Operation (Long-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p>	<p>Operation (Long-Term) Impacts</p> <p>7.7 acres of direct wetland impacts on Wetlands A, B, D, F, N, 1, 2, 6, 7, 8, 9, 16, 18, 21, and 22 (Ecology Category 2, 3, and 4 wetlands).</p> <p>22.5 acres of wetland buffer impacts, including wetlands without direct wetland impacts.</p> <p>Reduction in wetland functions (i.e. flood water detention/retention, groundwater recharge/discharge, and water quality improvement).</p> <p>Disruption of biological and wildlife support.</p> <p>Mitigation Measures</p> <p>Avoidance of wetland impacts through alternative alignment and engineering design. This design impact has been reduced to 7.7 acres.</p> <p>Minimization of wetland impacts could be further reduced through design of bridges and vertical wall structures.</p>	<p>Operation (Long-Term) Impacts</p> <p>0.3 acres of direct wetland impacts on Wetlands A, B, M, N, 16, and 23 (Ecology Category 2, 3, and 4 wetlands).</p> <p>Potential shade effects from bridges to Wetlands A, B, and D. Direct wetland impacts would be limited to placement of bridge piers and 0.09 acre of fill in Wetland A.</p> <p>7.1 acres of wetland buffer impacts, including wetlands without direct wetland impacts.</p> <p>Additional impacts are the same as Alternative B.</p> <p>Mitigation Measures</p> <p>Avoidance of wetland impacts through alternative alignment and engineering design. This design impact has been reduced to 0.3 acres. WSDOT has committed to avoiding Wetland F (northwest pond) and spanning Wetlands A, B, and D (Tyee Pond).</p>	<p>Operation (Long-Term) Impacts</p> <p>5.4 acres of direct wetland impacts on Wetlands A, B, D, G, H, K, M, N, S, 16, 20, and 23 (Ecology Category 2, 3, and 4 wetlands).</p> <p>Potential shade effects to Wetland A from bridge structure. Direct wetland impacts would be limited to placement of bridge piers.</p> <p>20.8 acres of wetland buffer impacts, including wetlands without direct wetland impacts.</p> <p>Additional impacts are the same as Alternative B.</p> <p>Mitigation Measures</p> <p>Avoidance of wetland impacts through alternative alignment and engineering design. This design impact has been reduced to 5.4 acres.</p> <p>Minimization of wetland impacts could be further reduced through design of bridges and vertical wall structures.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		<p>Compensatory mitigation for wetland impacts by creation of new wetlands, or restoration or enhancement of existing wetlands. Requirements include creation and/or restoration at a minimum 1:1 mitigation ratio. Additional mitigation is required to satisfy Ecology's wetland mitigation guidelines.</p> <p>Construction (Short-Term) Impacts</p> <p>Temporary wetland and buffer impacts during construction include limited clearing for access roads for bridge construction.</p> <p>Exposed soils could erode and increase sediment transport to wetlands.</p> <p>Mitigation Measures</p> <p>Wetlands impacted by short-term construction would be restored upon completion of construction.</p> <p>Affected wetlands and buffers would be replanted with native vegetation.</p> <p>Federal, state, and local best management practices would ensure that stormwater runoff is</p>	<p>Additional mitigation measures are the same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>	<p>Additional mitigation measures are the same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		collected and treated before entering existing bodies of water. A spill prevention plan will be in place during construction.		
3.7 Vegetation, Fish, and Wildlife	<p>Operation (Long-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p>	<p>Operation (Long-Term) Impacts</p> <p>Bridge structures that would cross wetlands and Des Moines Creek could restrict sunlight and precipitation to vegetation communities beneath the bridges. Operation-related impacts on wildlife are expected to be minor and related principally to ambient noise levels associated with vehicular traffic.</p> <p>Potential operation impacts on streams include water quality degradation from stormwater runoff to receiving waters.</p> <p>No federal- or state-listed sensitive, threatened, or endangered plant or wildlife species regularly breed, forage, or occupy the project area. No impacts on threatened or endangered species are anticipated.</p> <p>Mitigation Measures</p> <p>Mitigation measures for operation impacts would be</p>	<p>Operation (Long-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>WSDOT would contribute funds to capital improvement projects in the basin plan, which would significantly reduce peak flows in Des Moines Creek and stream bank erosion. This would reduce stream erosion impacts and improve the success rate of planned stream habitat restoration.</p> <p>Other mitigation measures would be the same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Alternative C2 would disturb less vegetation than Alternatives B and C3. Substantially less forested and wetland habitat would be cleared under Alternative C2. Other impacts would be the same as for</p>	<p>Operation (Long-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Alternative C3 would disturb less vegetation than Alternative B and more than Alternative C2. Other impacts would be the same as for Alternative B.</p> <p>Impacts associated with stream crossings would be similar to Alternative B and C2.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		<p>similar for all build alternatives. Following construction, native plant communities would be established to replace exotic, invasive species. Disturbed soils would also be covered, seeded, and/or revegetated with native species following construction.</p> <p>Water quality degradation is not expected as long as stormwater management plans, facilities, and related best management practices are installed and maintained to comply with the King County Surface Water Design Manual, and WSDOT's Highway Runoff Manual.</p> <p>Construction (Short-Term) Impacts</p> <p>Alternative B would have greater impacts on vegetation communities, particularly forested and wetland habitats, than Alternatives C2 and C3. Exposed and/or compacted soils would be susceptible to colonization by invasive species. Vegetation removal would result in loss of wildlife habitat that provides protective cover, nesting areas, and food for animals and could displace and/or eliminate wildlife. Heavy equipment use would cause temporary audible and visual disturbance to wildlife.</p>	<p>Alternative B.</p> <p>Alternative C2 would result in one new bridge crossing of Des Moines Creek and four new crossings of the East Fork of Des Moines Creek. Anadromous fish runs do not occur in the reaches of Des Moines Creek that will be spanned by the bridges. An existing Des Moines Creek culvert beneath South 200th Street would be extended.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>	

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		<p>Alternative B would result in one new bridge crossing of Des Moines Creek and four new crossings of the East Fork of Des Moines Creek. Anadromous fish runs do not occur in the stream reaches that would be crossed by the project. An existing Des Moines Creek culvert beneath South 200th Street would be extended. Construction activities could introduce a variety of pollutants and sediments into adjacent water resources. No impacts on threatened or endangered species are anticipated.</p> <p>Mitigation Measures</p> <p>Mitigation measures for construction impacts would be similar for all build alternatives. Construction activities would be scheduled to take into account timing recommendations from WDFW and other agencies to avoid disturbance to breeding wildlife in sensitive habitats, such as wetlands. Monitoring would be conducted during construction to ensure that mitigation measures are successfully implemented and that performance standards are achieved.</p> <p>Construction activities would occur outside of stream channels, and the period of</p>		

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		construction activity would be limited according to recommendations from WDFW, NMFS, and USFWS.		
3.8 Land Use	<p>Operation (Long-Term) Impacts</p> <p>96 acres of the existing SR 509 right-of-way would remain in its current use, along with the existing I-5 corridor right-of-way, between South 216th Street and South 310th Street.</p> <p>Regional traffic congestion patterns would continue to worsen. Accessibility to the airport would worsen.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p>	<p>Operation (Long-Term) Impacts</p> <p>Would require the greatest amount of new right-of-way acquisition (174-180 acres). This number does not include the existing/unutilized right-of-way for SR 509, I-5, or major arterials. 77 acres of the total needed would be vacant or undeveloped land (this is the most of all the build alternatives).</p> <p>Would require 0.5 acre of Des Moines Creek Park, and would avoid taking land from the Hillgrove Cemetery and the Federal Detention Center, but would take some land from the NW corner of the Alaska Airlines Gold Coast Center.</p> <p>Mitigation Measures</p> <p>WSDOT would coordinate with cities of SeaTac and Des Moines to identify alternative property that could offset impacts associated with acquiring portions of Des Moines Creek Park.</p>	<p>Operation (Long-Term) Impacts</p> <p>Would require the least amount of new right-of-way of all the build alternatives (96-102 acres). Would acquire the most land designated for Residential Low Density uses (30 acres), but the least Residential High Density land uses (17 acres).</p> <p>Would require the acquisition of 4.7 acres of Des Moines Creek Park, but would avoid the Hillgrove Cemetery, Alaska Airlines Gold Coast Center, and the Federal Detention Center.</p> <p>Mitigation Measures</p> <p>WSDOT would replace any lost parkland acreage through a negotiated land swap between WSDOT and the City of SeaTac.</p> <p>People and businesses displaced would be entitled to relocation assistance and payment programs.</p> <p>Permits and approvals would be acquired to ensure that the project is consistent with local</p>	<p>Operation (Long-Term) Impacts</p> <p>Would require 134-140 acres for new right-of-way. Would acquire the least amount of vacant or undeveloped land of all the build alternatives (29 acres).</p> <p>Would require 3.3 acres of Des Moines Creek Park.</p> <p>Would displace the Alaska Airlines Gold Coast Center, but avoid the Hillgrove Cemetery and the Federal Detention Center.</p> <p>Mitigation Measures</p> <p>WSDOT would replace any lost parkland acreage through a negotiated land swap between WSDOT and the City of SeaTac.</p> <p>People and businesses displaced would be entitled to relocation assistance and payment programs.</p> <p>Permits and approvals would be acquired to ensure that the</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		<p>People and businesses displaced would be entitled to relocation assistance and payment.</p> <p>Permits and approvals would be acquired to ensure that the project is consistent with local comprehensive plans, zoning ordinances, and other regulations.</p> <p>Construction (Short-Term) Impacts</p> <p>Temporary traffic congestion, access, and parking restrictions would affect the quality and character of existing land uses.</p> <p>Mitigation Measures</p> <p>Access impacts would be mitigated through appropriate construction practices as mentioned in the transportation analyses.</p>	<p>comprehensive plans, zoning ordinances, and other regulations.</p> <p>Construction (Short-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Could have fewer impacts than Alternative B because roughly 80 fewer acres would have to be acquired.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>	<p>project is consistent with local comprehensive plans, zoning ordinances, and other regulations.</p> <p>Construction (Short-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Could have fewer impacts than Alternative B because roughly 40 fewer acres would have to be acquired.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
3.9 Relocation	<p>Operation (Long-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p>	<p>Operation (Long-Term) Impacts</p> <p>24-28 businesses, 106-113 single-family units, 250 multifamily units, and 4 mobile homes.</p> <p>Mitigation Measures</p> <p>Displacees would be eligible for relocation assistance to find suitable and comparable relocation sites under the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended. Planned and approved housing exists in the project area.</p> <p>Most replacement housing would be within walking distance of SR 99, which has good transit service.</p> <p>WSDOT will find replacement housing already within the Section 8 program for displaced persons who receive assistance. If Section 8 housing is not available, WSDOT will compute the entitlement.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p>	<p>Operation (Long-Term) Impacts</p> <p>27-31 businesses, 80 single-family units, 196 multifamily units, and 5 mobile homes.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p>	<p>Operation (Long-Term) Impacts</p> <p>15-19 businesses, 114-118 single-family units, 127 multifamily units, and 4 mobile homes.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		Mitigation Measures None.		
3.10 Social	Operation (Long-Term) Impacts Community cohesion would be largely unaffected. The lack of access improvements would conflict with GMA concurrency requirements for proposed growth and development in the area. No impacts on recreational facilities. No direct impacts on services and utilities. No impacts on pedestrian and bicyclist facilities. Mitigation Measures None. Construction (Short-Term) Impacts None. Mitigation Measures None.	Operation (Long-Term) Impacts Moderately severe impacts on Homestead Park community cohesion. Moderate impacts on Madrona and Grandview community cohesion. Would assist jurisdictions within the project area to direct development in accordance with their comprehensive planning. 0.5 acre of Des Moines Creek Park would be acquired. No direct impacts on Midway Park, Linda Heights Park, or Mark Twain School Playfield. School access would be more complicated for some students who walk to school because of street closures. One church would be displaced. Some utilities would need to be relocated. Mitigation Measures Construct new access connections between South 208th Street and the SR 99 corridor to preserve and improve access to remaining apartment	Operation (Long-Term) Impacts Moderately severe impacts on Mansion Hill community cohesion. Moderate impacts on Madrona neighborhood community cohesion. Same regional and community growth impacts as Alternative B. Same recreational impacts as Alternative B, except would acquire 4.7 acres of Des Moines Creek Park. Same service and utility impacts as Alternative B. Mitigation Measures Same community cohesion mitigation as Alternative B except for the loss of connectivity at South 208th Street. Construct new access connections between South 208th, South 204th, and South 211th Streets to preserve access to remaining apartment complexes in the Madrona neighborhood. Portions of the existing WSDOT right-of-way would be traded to	Operation (Long-Term) Impacts Moderately severe impacts on Mansion Hill and Homestead Park community cohesion. Same regional and community growth impacts as Alternative B. Same recreational impacts as Alternative B, except would acquire 3.9 acres of Des Moines Creek Park. Same service and utility impacts as Alternative B. Mitigation Measures Same community cohesion mitigation as Alternative B. Same recreational mitigation as Alternative C2. Same service and utility mitigation as Alternative B. Construction (Short-Term) Impacts Existing utilities may need to be

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		<p>complexes in the Madrona neighborhood and single-family homes in the Homestead neighborhood.</p> <p>Investigate the feasibility and benefits of maintaining through access on key streets and installing pedestrian access across the roadway.</p> <p>Portions of unused existing WSDOT right-of-way would be traded to local jurisdictions in exchange for acquired parkland.</p> <p>Extend school bus routes to include children whose school access would be disrupted. Sidewalk construction related to access improvements would improve pedestrian access to Madrona Elementary School.</p> <p>Access plans would be developed for emergency services in areas where street access would be changed.</p> <p>Minimize utility outages during utility relocation.</p> <p>Construction (Short-Term) Impacts</p> <p>Existing utilities may need to be relocated during construction.</p> <p>During construction of the bridges over Des Moines Creek,</p>	<p>local jurisdictions in exchange for acquired parkland. An extension of Des Moines Creek Park Trail would be incorporated into alignment design.</p> <p>Same service and utility mitigation as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Existing utilities may need to be relocated during construction.</p> <p>During construction of the elevated structure in Des Moines Creek Park, the trailhead parking area and the northern end of Des Moines Creek Trail would likely need to be closed for safety reasons.</p> <p>Mitigation Measures</p> <p>If the trailhead parking area and trail (under Alternatives C2 and C3) need to be closed during construction for safety reasons. WSDOT would work closely with the City of SeaTac to minimize disruption to the facilities and, when unavoidable, work with the City to implement alternative routes/detours.</p>	<p>relocated during construction.</p> <p>During construction of the elevated structure in Des Moines Creek Park, the trailhead parking area and the northern end of Des Moines Creek Trail would likely need to be closed for safety reasons.</p> <p>Mitigation Measures</p> <p>WSDOT would work with local service providers to coordinate utility relocation efforts and to minimize service disruptions.</p> <p>Same mitigation measures as Alternative B.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		<p>Des Moines Creek Trail would likely need to be closed for safety measures.</p> <p>Mitigation Measures</p> <p>WSDOT would work with local service providers to coordinate utility relocation efforts and minimize service disruptions.</p> <p>WSDOT would work closely with the City of SeaTac to minimize disruption to the facilities and, when unavoidable, work with the City to implement alternative routes/detours.</p>		
3.11 Economic	<p>Operation (Long-Term) Impacts</p> <p>Traffic congestion on I-5, other north/south arterials, and some east/west arterials would continue to worsen despite numerous roadway improvements. This would impair the movement of goods and people within the cities of SeaTac and Des Moines and to Sea-Tac Airport.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p>	<p>Operation (Long-Term) Impacts</p> <p>The movement of goods and people from I-5 to Sea-Tac Airport and other locations along the SR 509 corridor would be improved. Commercial vehicles and individual passengers traveling to and from Sea-Tac Airport would experience travel time savings due to the improved roadway.</p> <p>The fiscal impacts associated with the initial loss of property tax revenues would represent less than 1 percent of each jurisdiction's total tax revenues; therefore, the impact would not be considered substantial. The</p>	<p>Operation (Long-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Construction would result in a \$690-\$710 million project and the associated positive impacts on employment and overall economic activity in the project area.</p> <p>Impacts on businesses might include temporarily increased congestion, noise, dust, and</p>	<p>Operation (Long-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Construction would result in a \$695-\$715 million project and the associated positive impacts on employment and overall economic activity in the project area.</p> <p>Impacts on businesses might include temporarily increased congestion, noise, dust, and</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
	<p>None.</p> <p>Mitigation Measures</p> <p>None.</p>	<p>impacts on sales tax revenues are also not likely to be substantial.</p> <p>The initial tax impacts associated with displacements would likely be offset eventually by tax revenues associated with increased development of vacant land and redevelopment of existing buildings throughout the project area.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>Construction would result in a \$715-\$735 million project and the associated positive impacts on employment and overall economic activity in the region.</p> <p>Impacts on businesses might include temporarily increased congestion, noise, dust, and possibly interrupted or more difficult access. Temporary reduction in retail sales might result as customers avoid shopping in the construction area (this would be partially offset by sales tax revenues generated by construction spending within the</p>	<p>possibly interrupted or more difficult access. Temporary reduction in retail sales might result as customers avoid shopping in the construction area (this would be partially offset by sales tax revenues generated by construction spending in the region).</p> <p>Right-of-way acquisition would displace between 27 and 31 businesses.</p> <p>Depending on the option selected, the construction of the South Airport Link would be expected to displace between 0 and 4 businesses in the SeaTac city center. I-5 improvements would displace 2 businesses.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>	<p>possibly interrupted or more difficult access. Temporary reduction in retail sales might result as customers avoid shopping in the construction area (this would be partially offset by sales tax revenues generated by construction spending in the region).</p> <p>Right-of-way acquisition would displace between 15 and 19 businesses.</p> <p>Depending on the option selected, the construction of the South Airport Link would be expected to displace between 0 and 4 businesses in the SeaTac city center. I-5 improvements would displace 2 businesses.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		<p>project area).</p> <p>Right-of-way acquisition would displace between 24 and 28 businesses.</p> <p>Depending on the option selected, the construction of the South Airport Link would be expected to displace between 0 and 4 businesses in the SeaTac city center. I-5 improvements would displace 2 businesses.</p> <p>Mitigation Measures</p> <p>Install temporary signage to inform drivers that access to businesses during construction is temporarily changed or restricted.</p> <p>Require contractors to submit and receive approval of a construction plan to maintain access for all properties and businesses adjacent to construction activity.</p> <p>Coordinate with affected business owners to develop and implement strategies to maintain access to businesses during construction.</p> <p>Inform businesses and tenants displaced by new right-of-way acquisition or other construction activities that they would be</p>		

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		entitled to relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 and RCW 8.26.		
3.12 Historic and Archaeological Resources	<p>Operation (Long-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p>	<p>Operation (Long-Term) Impacts</p> <p>No impacts would occur to known state or National Register listed or eligible resources.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>WSDOT would consult with the affected tribes during construction in accordance with Section 106 of the National Historic Preservation Act of 1966 and applicable state laws if eligible resources are inadvertently discovered.</p> <p>If required, archaeological monitoring will be undertaken during construction; in the event that potentially significant</p>	<p>Operation (Long-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>	<p>Operation (Long-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		archaeological remains are found, specific late discovery procedures will be followed. If any of the buildings to be removed during construction are determined by OAHP to be NRHP-eligible, mitigation measures may include modifications to the project design to avoid or minimize impacts; review and approval by SHPO and local Landmarks Preservation Board of project design elements that may damage, alter, or obscure views of a historic resource/designated local landmark; or relocation of the historic resource.		
3.13 Hazardous Waste	<p>Operation (Long-Term) Impacts</p> <p>Increases potential for hazardous materials spills because of future increases in traffic congestion.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>No known or potentially contaminated sites would be affected.</p>	<p>Operation (Long-Term) Impacts</p> <p>Less potential for hazardous materials spills associated with lower levels of traffic congestion.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>Thirty-six known or suspected contaminated sites could be affected.</p>	<p>Operation (Long-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>Forty known or suspected contaminated sites could be affected.</p> <p>The four substantially identified for alternative B could potentially</p>	<p>Operation (Long-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>Forty known or suspected contaminated sites could be affected.</p> <p>Six substantially contaminated sites could be affected,</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
	<p>Mitigation Measures</p> <p>None.</p>	<p>Four substantially contaminated sites could be affected. Potential soil and groundwater contaminants include petroleum hydrocarbons, solvents, and heavy metals.</p> <p>Construction of I-5 improvements could require excavation in or adjacent to the Midway Landfill.</p> <p>Mitigation Measures</p> <p>General mitigation includes erosion control, spill prevention and containment measures.</p> <p>Removal, and disposal of demolition debris, underground storage tanks, and contaminated soil would be conducted in accordance with regulatory requirements.</p> <p>Mitigation for construction in the vicinity of Midway landfill could include construction of retaining walls, odor control, and modification of the existing geomembrane and gas extraction system. The City of Seattle is responsible for landfill mitigation.</p>	<p>be affected.</p> <p>Same impacts associated with the Midway Landfill as for Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>	<p>including the four sites identified for Alternatives B and C2.</p> <p>Same impacts associated with the Midway Landfill as for Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>

**Table S-1
Summary of Major Environmental Impacts**

Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
3.14 Visual Quality	<p>Operation (Long-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p> <p>Construction (Short-Term) Impacts</p> <p>None.</p> <p>Mitigation Measures</p> <p>None.</p>	<p>Operation (Long-Term) Impacts</p> <p>Visual impacts on Lower Des Moines Creek, South 208th St. Draw, Mansion Hill, Midway Ridge, and Kent/Federal Way caused by clearing of vegetation, installation of noise walls, and construction of new lanes, ramps, or bridge structures. Changes would be visible to residents and recreational users.</p> <p>Mitigation Measures</p> <p>Incorporate aesthetic considerations into project design; minimize clearing and preserve stands of mature trees and natural vegetation; plant vegetation to preserve character, screen views, and blend the project with adjoining landscapes; consider wide-span bridge crossings to minimize view obstruction and interruption of visual continuity; employ principles of architectural design to enhance the appearance of project features and to promote visual corridor continuity; investigate opportunities to acquire sufficient right-of-way to provide space for plantings near retaining walls; and design interchanges as enhancements.</p>	<p>Operation (Long-Term) Impacts</p> <p>Visual impacts on Upper Des Moines Creek, South 208th St., Mansion Hill, Midway Ridge, and Kent/Federal Way caused by clearing of vegetation, installation of noise walls, and construction of new lanes, ramps, or bridge structures. Changes would be visible to residents and recreational users.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>	<p>Operation (Long-Term) Impacts</p> <p>Visual impacts on Upper Des Moines Creek, Mansion Hill, Midway Ridge, and Kent/Federal Way caused by clearing of vegetation, installation of noise walls, and construction of new lanes, ramps, or bridge structures. Changes would be visible to residents and recreational users.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p> <p>Construction (Short-Term) Impacts</p> <p>Same as Alternative B.</p> <p>Mitigation Measures</p> <p>Same as Alternative B.</p>

<p style="text-align: center;">Table S-1 Summary of Major Environmental Impacts</p>				
Environmental Element	Alternative A (No Action)	Alternative B	Alternative C2 (Preferred)	Alternative C3
		<p>Develop and implement visual guidelines for design and operation of the project.</p> <p>Construction (Short-Term) Impacts</p> <p>Construction equipment, materials, and signage could be visible in staging areas and temporary lighting could be necessary for nighttime construction.</p> <p>Mitigation Measures</p> <p>Locate material and equipment storage in areas that are not prominent and shield or locate roadway lighting so that light sources are not directly visible from residential areas.</p>		

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